Devi, S.
10/625972

14oct04 10:00:56 User219783 Session D2051.2

SYSTEM:OS - DIALOG OneSearch
File 65:Inside Conferences 1993-2004/Oct W2
(c) 2004 BLDSC all rts. reserv.
File 440:Current Contents Search(R) 1990-2004/Oct 14
(c) 2004 Inst for Sci Info
File 348:EUROPEAN PATENTS 1978-2004/Oct W01
(c) 2004 European Patent Office
File 357:Derwent Biotech Res. 1982-2004/Oct W3
(c) 2004 Thomson Derwent & ISI
File 113:European R&D Database 1997
(c)1997 Reed-Elsevier(UK)Ltd All rts reserv
*File 113: This file is closed (no updates)

Set	Items	Description
S1	254	AU=(TARR, P? OR TARR P?)
S2	83	AU=(BILGE, S? OR BILGE S?)
S3	265	AU=(BESSER, T? OR BESSER T?)
S4	253	AU=(VARY, J? OR VARY J?)
S5	3	S1 AND S2 AND S3 AND S4
S6	34	S1 AND (S2 OR S3 OR S4)
S7	14	S2 AND (S3 OR S4)
S8	3	S3 AND S4
S9	250	(S6 OR S1 OR S2 OR S3 OR S4) AND (COLI OR 0157H7 OR O157H7 OR (O157 OR 0157)(W)H7)
S10	25	S9 AND ADHESIN? ?
S11	34	S5 OR S7 OR S8 OR S10
S12	14	RD (unique items)

- Author (s)

>>>No matching display code(s) found in file(s): 65, 113

12/3,AB/1 (Item 1 from file: 65)
DIALOG(R)File 65:Inside Conferences
(c) 2004 BLDSC all rts. reserv. All rts. reserv.

01467225 INSIDE CONFERENCE ITEM ID: CN014562322
Escherichia coli O157:H7 Adherence and Colonization Mechanisms
Tarr, P. I.; **Bilge, S. S.**; **Vary, J. A.**; Tang, N. M.
CONFERENCE: Molecular approaches to food safety issues involving toxic microorganisms-International symposium; 8th
P: 329-338
Alaken, 1995
ISBN: 1880293056
LANGUAGE: English DOCUMENT TYPE: Conference Papers
CONFERENCE EDITOR(S): Eklund, M.; Richard, J. L.; Mise, K.
CONFERENCE LOCATION: Peoria, IL
CONFERENCE DATE: Nov 1994 (19941) (19941)
NOTE:
Includes bibliographies

12/3,AB/2 (Item 1 from file: 440)
DIALOG(R)File 440:Current Contents Search(R)
(c) 2004 Inst for Sci Info. All rts. reserv.

11563444 References: 30
TITLE: Molecular epidemiological and phylogenetic associations of two novel putative virulence genes, iha and iroN(E.coli), among Escherichia coli isolates from patients with urosepsis
AUTHOR(S): Johnson JR (REPRINT); Russo TA; Tarr PI; Carlino U; **Bilge SS; Vary JC;** Stell AL
AUTHOR(S) E-MAIL: johns007@tc.umn.edu
CORPORATE SOURCE: Minneapolis VA Med Ctr, Med Serv, 111F,1 Vet Dr/Minneapolis//MN/55417 (REPRINT); Minneapolis VA Med Ctr, Med Serv, /Minneapolis//MN/55417; Univ Minnesota, Dept Med, /Minneapolis//MN/55455; VA Med Ctr, Med Serv, /Buffalo//NY/; SUNY Buffalo, Dept Med, /Buffalo//NY/14260; SUNY Buffalo, Ctr Microbial Pathogenesis, /Buffalo//NY/14260; Univ Washington, Dept Pediat, /Seattle//WA/98195; Univ Washington, Div Gastroenterol, /Seattle//WA/98195
PUBLICATION TYPE: JOURNAL
PUBLICATION: INFECTION AND IMMUNITY, 2000, V68, N5 (MAY), P3040-3047
GENUINE ARTICLE#: 305ZX
PUBLISHER: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW, WASHINGTON, DC 20005-4171 USA
ISSN: 0019-9567
LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: Two novel putative Escherichia coli virulence genes, iha and iroN from E. coli (iroN (E. coli)), were detected in 55 and 39%, respectively, of 67 E. coli isolates from patients with urosepsis, iha and iroN (E. coli) exhibited divergent associations with other putative virulence genes, phylogenetic markers, host characteristics, and antimicrobial resistance.

12/3,AB/3 (Item 2 from file: 440)
DIALOG(R)File 440:Current Contents Search(R)

11360251 References: 44
TITLE: Iha: a novel Escherichia **coli O157 : H7** adherence-conferring molecule encoded on a recently acquired chromosomal island of conserved structure
AUTHOR(S): **Tarr PI (REPRINT); Bilge SS; Vary JC;** Jelacic S; Habeeb RL; Ward TR; Baylor MR; **Besser TE**
AUTHOR(S) E-MAIL: tarr@u.washington.edu
CORPORATE SOURCE: Childrens Hosp & Reg Med Ctr, Div Gastroenterol, CH-24,4800 Sand Point Way NE/Seattle//WA/98105 (REPRINT); Childrens Hosp & Reg Med Ctr, Div Gastroenterol, /Seattle//WA/98105; Univ Washington, Dept Pediat, /Seattle//WA/98195; Univ Washington, Dept Microbiol, /Seattle//WA/98195; Washington State Univ, Dept Vet Microbiol & Pathol, /Pullman//WA/99164
PUBLICATION TYPE: JOURNAL
PUBLICATION: INFECTION AND IMMUNITY, 2000, V68, N3 (MAR), P1400-1407
GENUINE ARTICLE#: 285UW
PUBLISHER: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW, WASHINGTON, DC 20005-4171 USA
ISSN: 0019-9567
LANGUAGE: English DOCUMENT TYPE: ARTICLE
ABSTRACT: The mechanisms used by Shiga toxin (Stx)-producing Escherichia **coli** to adhere to epithelial cells are incompletely understood. Two

cosmids from an E. **coli O157:H7** DNA library contain an adherence-conferring chromosomal gene encoding a protein similar to iron-regulated gene A (IrgA) of Vibrio cholerae (M. B. Goldberg, S. A. Boyko, J. R. Butterton, J. A. Stoebner, S, M. Payne, and S, B, Calderwood, Mol. Microbiol. 6:2407-2418, 1992), We have termed the product of this gene the IrgA homologue **adhesin** (Iha), which is encoded by iha. Iha is 67 kDa in E. **coli O157:H7** and 78 kDa in laboratory E. **coli** and is structurally unlike other known **adhesins**, DNA adjacent to iha contains tellurite resistance loci and is conserved in structure in distantly related pathogenic E. **coli**, but it is absent from nontoxigenic E. **coli** O55:H7, sorbitol-fermenting Stx-producing E. **coli** O157:H-, and laboratory E. **coli**. We have termed this region the tellurite resistance- and adherence-conferring island. me conclude that Iha is a novel bacterial adherence-conferring protein and is contained within an E. **coli** chromosomal island of conserved structure. Pathogenic E. **coli O157:H7** has only recently acquired this island.

12/3,AB/4 (Item 3 from file: 440)
DIALOG(R)File 440:Current Contents Search(R)

09482460 References: 20
TITLE: A PCR specific for Escherichia coli O157 based on the rfb locus encoding O157 lipopolysaccharide
AUTHOR(S): Desmarchelier PM (REPRINT); **Bilge SS**; Fegan N; Mills L; **Vary JC**; Tarr PI
CORPORATE SOURCE: CSIRO,POB 3312/TINGALPA/QLD 4173/AUSTRALIA/ (REPRINT); COMMONWEALTH SCI & IND RES ORG,/BRISBANE/QLD/AUSTRALIA/; UNIV WASHINGTON,/SEATTLE//WA/98195; CHILDRENS HOSP & MED CTR,/SEATTLE//WA/98105
PUBLICATION TYPE: JOURNAL
PUBLICATION: JOURNAL OF CLINICAL MICROBIOLOGY, 1998, V36, N6 (JUN), P 1801-1804
GENUINE ARTICLE#: ZN392
PUBLISHER: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW, WASHINGTON, DC 20005-4171
ISSN: 0095-1137
LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: A PCR was developed for the detection of Escherichia coil O157 based on the rfbE O-antigen synthesis genes. A 479-bp PCR product was amplified specifically from E. coli O157 in cell lysates containing 200 or 2 CFU following crude DNA extraction. The PCR detected <1 CFU off, coli O157 per mi in raw milk following enrichment.

12/3,AB/5 (Item 4 from file: 440)
DIALOG(R)File 440:Current Contents Search(R)

07859567 References: 45
TITLE: Role of the Escherichia coli O157:H7 O side chain in adherence and analysis of an rfb locus
AUTHOR(S): **Bilge SS**; **Vary JC**; Dowell SF; Tarr PI

CORPORATE SOURCE: CHILDRENS HOSP & MED CTR,DIV GASTROENTEROL, 4800 SAND POINT WAY NE/SEATTLE//WA/98105 (REPRINT); CHILDRENS HOSP & MED CTR,DIV GASTROENTEROL/SEATTLE//WA/98105; UNIV WASHINGTON,SCH MED, DEPT PEDIAT/SEATTLE//WA/98195; UNIV WASHINGTON,SCH MED, DEPT MICROBIOL/SEATTLE//WA/98195
PUBLICATION TYPE: JOURNAL
PUBLICATION: INFECTION AND IMMUNITY, 1996, V64, N11 (NOV), P4795-4801
GENUINE ARTICLE#: VP428
PUBLISHER: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW, WASHINGTON, DC 20005-4171
ISSN: 0019-9567
LANGUAGE: English DOCUMENT TYPE: ARTICLE

ABSTRACT: Shiga-toxigenic Escherichia coli strains belonging to serotype O157 are important human pathogens, but the genetic basis of expression of the O157 antigen and the role played by the lipopolysaccharide O side chain in the adherence of this organism to epithelial cells are not understood, We performed TnphoA mutagenesis on E. coli O157:H7 strain 86-24 to identify a mutant (strain F12) deficient in O-antigen expression, Nucleotide sequence analysisdemonstrated that the transposon inserted within an open reading frame with significant homology to rfbE of Vibrio cholerae O1 (U, H, Stroeher, L. E,Karageorgos, R Morona, and P. A. Manning, Proc, Natl, Acad, Sci, USA 89:2566-2570, 1992), which is postulated to encode perosamine synthetase. This open reading frame was designated rfbE(EcO157:H7). The guanine-plus-cytosinefraction (0.35) suggests that rfbE(EcO157:H7) may have originated in a species other than E. coli. rfbE(EcO157:H7) is conserved in nontoxigenic E, coli O157 strains expressing a variety of other flagellar antigens but is notfound in E. coli O55:H7 strains, which are more closely related to E, coliO157:H7, Strain F12 was significantly more adherent to HeLa cells in a quantitative adherence assay than was its E, coli O157:H7 parent, but they didnot differ in other phenotypes, Restoration of the expression of the O side chain by complementation of the TnphoA mutation in strain F12 by a plasmid expressing intact rfbE(EcO157:H7) reduced the adherence of the hyperadherent strain F12. We conclude that rfbE(EcO157:H7) is necessary for the expression of the O157 antigen, that acquisition of E. coli rfb genes occurred independently in E, coli O157:H7 and unrelated O157 strains, and that the O side chain of E, coli O157:H7 lipopolysaccharide interferes with the adherence of E. coli O157:H7 to epithelial cells.

12/3,AB/6 (Item 5 from file: 440)
DIALOG(R)File 440:Current Contents Search(R)

04426872 References: 59
TITLE: TRANSCRIPTIONAL ORGANIZATION OF THE F1845 FIMBRIAL **ADHESIN** DETERMINANT OF ESCHERICHIA-**COLI**
AUTHOR(S): **BILGE SS**; APOSTOL JM; FULLNER KJ; MOSELEY SL (Reprint)
CORPORATE SOURCE: UNIV WASHINGTON,DEPT MICROBIOL,SC-42/SEATTLE//WA/98195 (Reprint); UNIV WASHINGTON,DEPT MICROBIOL,SC-42/SEATTLE//WA/98195
PUBLICATION: MOLECULAR MICROBIOLOGY, 1993, V7, N6 (MAR), P993-1006
GENUINE ARTICLE#: KU144
ISSN: 0950-382X
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

ABSTRACT: The transcriptional organization of the gene cluster encoding the F1845 fimbrial **adhesin** of a diarrhoea-associated Escherichia **coli** was investigated. Genes daaA to daaE were determined to constitute a single transcriptional unit under the control of the daaA promoter. The nucleotide sequence of daaA and that of an upstream open reading frame encoded on the opposite strand, designated daaF, were determined to share limited homology with the papB and papI genes of the P fimbrial **adhesin**, respectively. The 5' termini of the daaF and daaABCDE transcripts were mapped by primer extension' and nuclease protection analyses. The promoters for these transcripts were associated with potential regulatory sequences including two consensus leucine-responsive regulatory protein (Lrp)-binding sites which contained differentially methylated GATC sequences, a cAMP-CRP-binding site, and an integration host factor (IHF)-binding site. Expression of the daa locus was determined to be dependent on Lrp, subject to catabolite repression, and dependent on IHF.

12/3,AB/7 (Item 6 from file: 440)
DIALOG(R)File 440:Current Contents Search(R)

04340699 References: 27
TITLE: MESSENGER RNA PROCESSING INDEPENDENT OF RNASE-III AND RNASE-E IN THE EXPRESSION OF THE F1845 FIMBRIAL **ADHESIN** OF ESCHERICHIA-**COLI**
AUTHOR(S): **BILGE SS**; APOSTOL JM; ALDAPE MA; MOSELEY SL (Reprint)
CORPORATE SOURCE: UNIV WASHINGTON,DEPT MICROBIOL/SEATTLE//WA/98195 (Reprint); UNIV WASHINGTON,DEPT MICROBIOL/SEATTLE//WA/98195
PUBLICATION: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, 1993, V90, N4 (FEB 15), P1455-1459
GENUINE ARTICLE#: KM607
ISSN: 0027-8424
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

ABSTRACT: F1845, the fimbrial **adhesin** of a diarrhea-associated Escherichia **coli**, confers upon the bacteria the ability to adhere to cultured epithelial cells in a diffuse pattern. The fimbrial subunit gene, daaE, is encoded on a polycistronic mRNA which is processed endoribonucleolytically to produce a stable message encoding only daaE. The processing event occurs in bacterial strains with mutations in RNase III or RNase E, the only endoribonucleases which have been implicated in the processing of E. **coli** mRNA. Sequences encoding a stem-loop structure downstream of daaE play an essential role in determining the stability of the daaE mRNA. Rapid degradation of the sequences upstream of the cleavage site occurs upon processing, suggesting that processing of the F1845 polycistronic mRNA results in differential expression of genes involved in the biogenesis of fimbriae.

12/3,AB/8 (Item 7 from file: 440)
DIALOG(R)File 440:Current Contents Search(R)

03215653 References: 45
TITLE: USE OF PURIFIED F1845 FIMBRIAL **ADHESIN** TO STUDY LOCALIZATION

AND EXPRESSION OF RECEPTORS FOR DIFFUSELY ADHERING ESCHERICHIA-**COLI** DURING ENTEROCYTIC DIFFERENTIATION OF HUMAN COLON CARCINOMA CELL LINES HT-29 AND CACO-2 IN CULTURE

AUTHOR(S): KERNEIS S; **BILGE SS**; FOUREL V; CHAUVIERE G; COCONNIER MH; SERVIN AL (Reprint)
CORPORATE SOURCE: UFR SCI PHARMACEUT PARIS 11,DEPT MICROBIOL & IMMUNOL/F-92296 CHATENAY MALABRY//FRANCE/ (Reprint); UFR SCI PHARMACEUT PARIS 11,DEPT MICROBIOL & IMMUNOL/F-92296 CHATENAY MALABRY//FRANCE/; UNIV WASHINGTON,DEPT MICROBIOL/SEATTLE//WA/98195
PUBLICATION: INFECTION AND IMMUNITY, 1991, V59, N11 (NOV), P4013-4018
GENUINE ARTICLE#: GM530
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

ABSTRACT: Whole diffusely adhering Escherichia **coli** (DAEC) C1845 cells bearing the F1845 adhesive factor bind diffusely to differentiated human colon carcinoma cell lines HT-29 and Caco-2. By using antibodies directed against the purified fimbrial **adhesin** F1845 factor, the expression of the DAEC F1845-specific brush border receptors in the polarized human intestinal HT-29 and Caco-2 epithelial cells was studied by indirect immunofluorescence. A low level of DAEC F1845 receptors in undifferentiated intestinal cells was detected; they were localized in a cluster of cells. DAEC F1845 receptors were expressed at a high level in differentiated HT-29 and Caco-2 cells. DAEC F1845 receptors were expressed at a strikingly high level in the apical domains of the cells and developed during enterocytic differentiation in culture, in parallel with the apical expression of the intestinal brush border hydrolase, sucrase-isomaltase.

12/3,AB/9 (Item 8 from file: 440)
DIALOG(R)File 440:Current Contents Search(R)

02495732 References: 45
TITLE: MOLECULAR STRUCTURE OF THE DR-**ADHESIN** - NUCLEOTIDE SEQUENCE AND MAPPING OF RECEPTOR-BINDING DOMAIN BY USE OF FUSION CONSTRUCTS

AUTHOR(S): SWANSON TN; **BILGE SS**; NOWICKI B; MOSELEY SL (Reprint)
CORPORATE SOURCE: UNIV WASHINGTON,DEPT MICROBIOL/SEATTLE//WA/98195 (Reprint); UNIV WASHINGTON,DEPT MICROBIOL/SEATTLE//WA/98195; BAYLOR UNIV/HOUSTON//TX/77030
PUBLICATION: INFECTION AND IMMUNITY, 1991, V59, N1 (JAN), P261-268
GENUINE ARTICLE#: EP751
LANGUAGE: ENGLISH DOCUMENT TYPE: ARTICLE

ABSTRACT: The Dr hemagglutinin of uropathogenic Escherichia **coli** mediates adherence to the upper urinary tract. E. **coli** strains which express this **adhesin** bind to the Dr blood group antigen and mediate mannose-resistant hemagglutination (MRHA). Chloramphenicol inhibits MRHA produced by the Dr hemagglutinin and may act as an analog for the tissue receptor at the **adhesin**-binding site. The nucleotide sequence of the Dr hemagglutinin fimbrial subunit was determined and found to have significant homology with that of F1845, a fimbrial **adhesin** associated with diarrhea, and with the afimbrial adhesion AFA-I of uropathogenic E. **coli**. Chimeric **adhesin** determinants consisting of the Dr structural subunit and F1845 accessory genes or of the F1845 structural subunit and Dr. accessory genes were constructed. The Dr and F1845 determinants were shown to have a close structural relationship, with

functional differences concentrated in the fimbrial subunit. Oligonucleotide-directed site-specific mutagenesis was used to facilitate construction of a hybrid **adhesin** subunit gene containing the amino terminus of F1845 fused to the carboxy terminus of the Dr structural gene. The resulting construct confers chloramphenicol-resistant hemagglutination when introduced into an E. **coli** strain expressing the cloned Dr hemagglutinin. The chloramphenicol sensitivity or resistance phenotype of MRHA produced by this family of **adhesins** is determined solely by the fimbrial subunit gene. Domains responsible for the chloramphenicol sensitivity of Dr-mediated MRHA reside within the amino-terminal portion of the fimbrial subunit.

12/3,AB/10 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01024478
METHODS AND MATERIALS FOR DETECTING $i(E. COLI) O157 IN POLYMERASE CHAIN REACTION ASSAYS
PROCEDES ET MATERIAUX PERMETTANT DE DECELER $i(E. COLI) O157 LORS DE L'AMPLIFICATION EN CHAINE DE LA POLYMERASE
PATENT ASSIGNEE:
CHILDREN'S HOSPITAL AND MEDICAL CENTER, (2085480), 4800 Sand Point Way N.E., Seattle, WA 98105-0371, (US), (Applicant designated States: all)
UNIVERSITY OF WASHINGTON, (1332175), Office of Technology Transfer, JD-50, 1107 NE 45th Street, Suite 200,, Seattle, WA 98105, (US), (Applicant designated States: all)
CSIRO, (2698780), Division of Food Science and Technology, Brisbane Laboratory, P.O. Box 3312, Tingalpa D.C., QLD 4173, (AU), (Applicant designated States: all)
INVENTOR:
TARR, Phillip, I., 3717 N.E. 43rd Street, Seattle, WA 98105, (US)
BILGE, **Sima**, **S.**, 14622 N.E. 30th Place, 18D, Bellevue, WA 98007, (US)
VARY, **James**, **C.**, **Jr.**, 10046 - 35th Avenue N.E., Seattle, WA 98125, (US)
FEGAN, Narelle, M., 9 Camelia Street, Cannon Hill, QLD 4170, (AU)
DESMARCHELIER, Patricia, M., 11 McCaul Street, Taringa, QLD 4068, (AU
PATENT (CC, No, Kind, Date): WO 9904039 990128
APPLICATION (CC, No, Date): WO 97934179 970716; WO 97US12398 970716
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
INTERNATIONAL PATENT CLASS: C12Q-001/68; C07H-021/02; C07H-021/04
LANGUAGE (Publication,Procedural,Application): English; English; English

12/3,AB/11 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00811960
NUCLEIC ACID PROBES FOR DETECTING E. COLI O157:H7
NUKLEINSAURESONDEN ZUM NACHWEIS VON E. COLI 0157:H7
SONDES D'ACIDE NUCLEIQUE POUR LA DETECTION DE E. COLI O157:H7

PATENT ASSIGNEE:
CHILDREN'S HOSPITAL AND MEDICAL CENTER, (2085480), 4800 Sand Point Way N.E., Seattle, WA 98105-0371, (US), (Proprietor designated states: all)
INVENTOR:
TARR, Phillip, I., 3717 Northeast 43rd Street, Seattle, WA 98105, (US)
BILGE, Sima, S., 14622 Northeast 30th Place, 18D, Bellevue, WA 98007, (US)
VARY, James, C., Upper Apartment, 1117 Ravenna, Seattle, WA 98105, (US
LEGAL REPRESENTATIVE:
Cornish, Kristina Victoria Joy et al (79701), Kilburn & Strode, 20 Red Lion Street, London WC1R 4PJ, (GB)
PATENT (CC, No, Kind, Date): EP 832090 A1 980401 (Basic)
EP 832090 B1 031119
WO 96032405 961017
APPLICATION (CC, No, Date): EP 96910830 960412; WO 96US5150 960412
PRIORITY (CC, No, Date): US 423564 950414
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
INTERNATIONAL PATENT CLASS: C12Q-001/68; C07K-014/245
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200347	70
CLAIMS B	(German)	200347	64
CLAIMS B	(French)	200347	70
SPEC B	(English)	200347	4062
Total word count - document A			0
Total word count - document B			4266
Total word count - documents A + B			4266

12/3,AB/12 (Item 1 from file: 357)
DIALOG(R)File 357:Derwent Biotech Res.

0234720 DBR Accession No.: 99-04821 PATENT
New polymerase chain reaction primers - Escherichia coli strain-specific DNA primer and DNA probe construction, used in polymerase chain reaction for infection diagnosis
AUTHOR: Tarr P I; **Bilge S S; Vary Jr J C;** Fegan N M; Desmarchelier P M
CORPORATE SOURCE: Seattle, WA, USA; Tingalpa, Queensland, Australia.
PATENT ASSIGNEE: Child.Hosp.Med.Cent.Seattle; Univ.Washington-Seattle; CSIRO 1999
PATENT NUMBER: WO 9904039 PATENT DATE: 990128 WPI ACCESSION NO.: 99-132279 (9911)
PRIORITY APPLIC. NO.: US 423564 APPLIC. DATE: 950414
NATIONAL APPLIC. NO.: WO 97US12398 APPLIC. DATE: 970716
LANGUAGE: English
ABSTRACT: A new polymerase chain reaction (PCR) DNA primer for detection of Escherichia coli O157 consists of at least 10 contiguous nucleotides and hybridizes under stringent conditions to a specified 2,255 bp DNA sequence or its complement, but not to DNA of E. coli O55:H7. Also new

are pairs of DNA primers for specific amplification of E. coli O157 DNA. The new DNA primers may be used to detect O157, an enteric pathogen that expresses Shiga-like toxin, in food and fecal samples. The DNA primers do not amplify DNA from closely-related but non-hemorrhagic strains, nor from other non-E. coli bacteria. Also disclosed are: 3 expression products from E. coli encoded by specified DNA sequences which may all be used as potential immunogens for raising antibodies for detection of O157; and a DNA sequence which may be used as a DNA probe for O157 detection. (38pp)

12/3,AB/13 (Item 2 from file: 357)
DIALOG(R)File 357:Derwent Biotech Res.

0204571 DBR Accession Number: 96-15342 PATENT
New isolated nucleic acid molecules - DNA probe for enterohemorrhagic mutant Escherichia coli detection
AUTHOR: Tarr P I; **Bilge S S; Vary J C**
CORPORATE SOURCE: Seattle, WA, USA.
PATENT ASSIGNEE: Child.Hosp.Med.Cent.Seattle; Univ.Washington-Seattle 1996
PATENT NUMBER: WO 9632405 PATENT DATE: 961017 WPI ACCESSION NO.: 96-477064 (9647)
PRIORITY APPLIC. NO.: US 423564 APPLIC. DATE: 950414
NATIONAL APPLIC. NO.: WO 96US5150 APPLIC. DATE: 960412
LANGUAGE: JA
ABSTRACT: An isolated nucleic acid molecule is new and contains at least 15 contiguous nucleotides of a specified DNA sequence or its complement. Also claimed is a DNA probe for detecting the presence of enterohemorrhagic Escherichia coli O157:H7. The isolated molecule hybridizes under stringent conditions to a specific sequence or its complement and to O157:H7 DNA but not enteropathogenic E. coli O55:H7 DNA. Transposon phoA insertion mutagenesis is used to create E. coli O157:H7 mutants that do not express this antigen. Mutants are obtained which are hyperadherent to HeLa cells. The nucleic acid can be used for the specific detection of O157:H7 in food, agricultural and clinical samples. The nucleic acid can also be used to produce expression products which can be used as immunogens for preparing antibody reagents for the detection of O157:H7 strains. (22pp)

12/3,AB/14 (Item 3 from file: 357)
DIALOG(R)File 357:Derwent Biotech Res.

0191863 DBR Accession Number: 96-03266 PATENT
Chromosomal DNA from E. **coli** O15:H7 - Escherichia **coli** **adhesin** gene cloning and expression for use as a cattle or human recombinant vaccine
AUTHOR: **Tarr P I; Bilge S S; Besser T E; Vary Jr J C**
CORPORATE SOURCE: Seattle, WA, USA; Pullman, WA, USA.
PATENT ASSIGNEE: Child.Hosp.Med.Cent.Seattle; Univ.Washington-Seattle; Univ.Washington-State-Res.Found 1996
PATENT NUMBER: WO 9600233 PATENT DATE: 960104 WPI ACCESSION NO.:

96-068826 (9607)
PRIORITY APPLIC. NO.: US 265714 APPLIC. DATE: 940624
NATIONAL APPLIC. NO.: WO 95US6994 APPLIC. DATE: 950607
LANGUAGE: English
ABSTRACT: A new DNA sequence may be inserted in a vector for expression in a host cell. The DNA encodes an Escherichia **coli O157:H7 adhesin** which may be used as a recombinant vaccine to prevent disease or colonization of mucosa surfaces by E. **coli O157:H7** in cattle, thus increasing microbiological safety of food derived from cattle, and in prevention of human disease. The **adhesin** gene has been isolated by screening mutants for a highly adherent strain, transduction of another strain, and sequencing of DNA from the transductant. The vaccine may be used as a purified antigen or whole cell vaccine, and can also prevent the spread of disease caused by strains with antibiotic-resistance. In an example, 2,000 alkaline phosphatase (EC-3.1.3.1)-expressing and non-expressing transposon mutants of E. **coli O157:H7** 86-24NalR were screened, and clone 20D2B with high adherence to HeLa cells was isolated. A Sau3A DNA library was constructed in plasmid pSC in E. **coli** NM554, and 2 clones were identified and sequenced, resulting in isolation of a gene homologous to the Vibrio cholerae outer membrane protein IrgA gene. (42pp)
? log y
14oct04 10:03:08 User219783 Session D2051.3

Devi, S.
10/625972

FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO, PHIC, PHIN, TOXCENTER, PASCAL, DISSABS, FEDRIP' ENTERED AT 10:57:31 ON 14 OCT 2004

L1	593	SEA	ABB=ON	PLU=ON	"TARR P"?/AU
L2	158	SEA	ABB=ON	PLU=ON	"BILGE S"?/AU
L3	431	SEA	ABB=ON	PLU=ON	"BESSER T"?/AU
L4	670	SEA	ABB=ON	PLU=ON	"VARY J"?/AU
L5	15	SEA	ABB=ON	PLU=ON	L1 AND L2 AND L3 AND L4
L6	70	SEA	ABB=ON	PLU=ON	L1 AND (L2 OR L3 OR L4)
L7	37	SEA	ABB=ON	PLU=ON	L2 AND (L3 OR L4)
L8	15	SEA	ABB=ON	PLU=ON	L3 AND L4
L9	521	SEA	ABB=ON	PLU=ON	(L6 OR L7 OR L1 OR L2 OR L3 OR L4) AND (COLI OR O157H7 OR 0157H7 OR (O157 OR 0157)(W) H7)
L10	51	SEA	ABB=ON	PLU=ON	L9 AND ADHESIN
L11	51	SEA	ABB=ON	PLU=ON	L5 OR L8 OR L10
L12	17	DUP REM	L11	(34 DUPLICATES REMOVED)	

- Author(s)

L12 ANSWER 1 OF 17 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN

ACCESSION NUMBER: 2003:517661 BIOSIS
DOCUMENT NUMBER: PREV200300520075
TITLE: Regulation of the IrgA homologue **adhesin** of Escherichia **coli O157:H7**.
AUTHOR(S): Rashid, R. [Reprint Author]; Medenica, I.; Jelaeiae, S. [Reprint Author]; **Tarr, P. I.** [Reprint Author]; Moseley, S. L. [Reprint Author]
CORPORATE SOURCE: University of Washington, Seattle, WA, USA
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (2003) Vol. 103, pp. B-349. http://www.asmusa.org/mtgsrc/generalmeeting.htm. cd-rom. Meeting Info.: 103rd American Society for Microbiology General Meeting. Washington, DC, USA. May 18-22, 2003. American Society for Microbiology. ISSN: 1060-2011 (ISSN print).
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 5 Nov 2003
Last Updated on STN: 5 Nov 2003

AB Escherichia **coli O157:H7** causes serious human gastrointestinal disease. The IrgA homologue **adhesin** (Iha) is an adherence-conferring outer membrane protein of E. **coli O157:H7** and is found in uropathogenic E. **coli**. Sequence analysis demonstrates a putative ferric uptake regulator (Fur)-binding site upstream of iha, but it is not known if iha expression is regulated by iron in organisms that contain this gene. We therefore hypothesized that iron levels play a role in iha regulation. To locate the promoter, we performed primer extension and nuclease protection analysis to map the 5' end of the iha transcript in laboratory E. **coli** strain ORN172 containing cloned Iha as well as primer extension analysis in E. **coli O157:H7** strain 86-24 and uropathogenic prototype strain CFTO73. The sequences of the promoter regions of 86-24 and CFTO73 are identical, and identical 5' termini of transcripts were observed in both strains as well as in the recombinant strain. These results were consistent with the location of the promoter region within the putative Fur binding site. Expression of

Iha was examined by immunoblot analysis of outer membrane preparations. Iha was expressed in cultures grown in DMEM minimal medium but not in LB broth. Further experiments, including RT-PCR, primer extensions, and the use of transcriptional fusions, determined that this regulation occurs at the transcriptional level. FeCl3 added to DMEM reduced transcription of iha. These results are consistent with the hypothesis that Fur represses iha transcription in the presence of iron. In summary, we have identified the transcriptional start site of iha and determined that it is identical in E. **coli O157:H7** and a uropathogenic isolate. iha is regulated at the transcriptional level and is repressed by the presence of iron. Current studies are examining the role of Fur in iha regulation.

L12 ANSWER 2 OF 17 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2002695436 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12438362
TITLE: Molecular characterization of a serotype O121:H19 clone, a distinct Shiga toxin-producing clone of pathogenic Escherichia **coli**.
AUTHOR: Tarr Cheryl L; Large Teresa M; Moeller Chris L; Lacher David W; **Tarr Phillip I**; Acheson David W; Whittam Thomas S
CORPORATE SOURCE: Microbial Evolution Laboratory, National Food Safety and Toxicology Center, Michigan State University, East Lansing 48824, USA.
CONTRACT NUMBER: AI-47499 (NIAID)
N01-AI-65299 (NIAID)
SOURCE: Infection and immunity, (2002 Dec) 70 (12) 6853-9.
Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200301
ENTRY DATE: Entered STN: 20021217
Last Updated on STN: 20030108
Entered Medline: 20030107

AB Most illnesses caused by Shiga toxin-producing Escherichia **coli** (STEC) have been attributed to E. **coli** serotype **O157:H7**, but non-O157 STEC infections are now increasingly recognized as public health problems worldwide. The O121:H19 serotype is being isolated more frequently from clinical specimens and has been implicated in one waterborne outbreak. We used multilocus virulence gene profiling, a PCR-based assay, to characterize the virulence gene content of 24 isolates of serotype O121:H19 and nonmotile variants. We also performed multilocus enzyme electrophoresis and multilocus sequencing to establish the clonal relatedness of O121 isolates and to elucidate the relationship of O121 to common STEC clones. The 24 isolates were found to represent a single bacterial clone, as there was no allelic variation across 18 enzyme loci among the isolates. The complete nucleotide sequence of the intimin gene differed by four substitutions from that of the epsilon (Int- epsilon) allele of O103:H2 strain PMK5. The typical O121 virulence gene profile was similar to the profiles of enterohemorrhagic E. **coli** (EHEC) clones of E. **coli**: it included a Shiga toxin 2 gene (stx(2)), two genes on the EHEC plasmid (toxB and ehxA), and the gene encoding intimin (eae). Despite the similarities, putative virulence genes

distributed on O islands-large chromosomal DNA segments present in the **O157:H7** genome-were useful for discriminating among STEC serotypes and the O121:H19 clone had a composite profile that was distinct from the profiles of the other major EHEC clones of pathogenic E. **coli**. On the basis of sequencing analysis with 13 housekeeping genes, the O121:H19 clone did not fall into any of the four classical EHEC and enteropathogenic E. **coli** groups but instead was closely related to two eae-negative STEC strains.

L12 ANSWER 3 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2000:180901 CAPLUS
DOCUMENT NUMBER: 132:235896
TITLE: Escherichia **coli O157:H7** epithelial adhesion and vaccine
INVENTOR(S): **Tarr, Phillip I.; Bilge, Sima S.; Besser, Thomas E.; Vary, James C., Jr.**
PATENT ASSIGNEE(S): Children's Hospital and Medical Center, USA; University of Washington; University Research Foundation
SOURCE: U.S., 28 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6040421	A	20000321	US 1998-98082	19980616
PRIORITY APPLN. INFO.:			US 1998-98082	19980616

AB Disclosed are polypeptides encoded by a continuous segment of chromosomal DNA from E. **coli O157:H7**, isolated on plasmid pSC(overlap) (ATCC Number 69648), that encodes an **adhesin** (SEQ ID NO:5) that mediates bacterial colonization of bovine intestines. The encoded **adhesin** is useful in preparation of immunoprophylactic vaccines for preventing outbreak of infection by shiga-like toxin-producing Escherichia **coli** and diseases caused by the SLT-producing Escherichia **coli**-contaminated beef or related foods.
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 4 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2000:146809 CAPLUS
DOCUMENT NUMBER: 132:343970
TITLE: Iha: a novel Escherichia **coli O157 :H7** adherence-conferring molecule encoded on a recently acquired chromosomal island of conserved structure
AUTHOR(S): **Tarr, Phillip I.; Bilge, Sima S.; Vary, James C., Jr.**; Jelacic, Srdjan; Habeeb, Rebecca L.; Ward, Teresa R.; Baylor, Michael R.; **Besser, Thomas E.**
CORPORATE SOURCE: Division of Gastroenterology, Children's Hospital and Regional Medical Center, and Departments of Pediatrics and Microbiology, University of Washington School of

Medicine, Seattle, WA, USA
SOURCE: Infection and Immunity (2000), 68(3), 1400-1407
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mechanisms used by Shiga toxin (Stx)-producing Escherichia **coli** to adhere to epithelial cells are incompletely understood. Two cosmids from an E. **coli O157:H7** DNA library contain an adherence-conferring chromosomal gene encoding a protein similar to iron-regulated gene A (IrgA) of Vibrio cholerae. We have termed the product of this gene the IrgA homolog **adhesin** (Iha), which is encoded by iha. Iha is 67 kDa in E. **coli O157:H7** and 78 kDa in laboratory E. **coli** and is structurally unlike other known **adhesins**. DNA adjacent to iha contains tellurite resistance loci and is conserved in structure in distantly related pathogenic E. **coli**, but it is absent from nontoxigenic E. **coli** O55:H7, sorbitol-fermenting Stx-producing E. **coli** O157:H-, and laboratory E. **coli**. We have termed this region the tellurite resistance- and adherence-conferring island. We conclude that Iha is a novel bacterial adherence-conferring protein and is contained within an E. **coli** chromosomal island of conserved structure. Pathogenic E. **coli O157:H7** has only recently acquired this island.
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 5 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 1998:572264 CAPLUS
DOCUMENT NUMBER: 129:188361
TITLE: Escherichia **coli O157:H7** epithelial **adhesin** gene sequence and vaccine for cattle
INVENTOR(S): **Tarr, Phillip I.; Bilge, Sima S.; Besser, Thomas E.; Vary, James C., Jr.**
PATENT ASSIGNEE(S): Children's Hospital and Medical Center, USA; University of Washington; Washington State University Research Foundation
SOURCE: U.S., 28 pp., Cont.-in-part of U.S. Ser. No. 265,714, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5798260	A	19980825	US 1997-765081	19970326
WO 9600233	A1	19960104	WO 1995-US6994	19950607

W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE,

SN, TD, TG

PRIORITY APPLN. INFO.: US 1994-265714 19940624
WO 1995-US6994 19950607

AB A continuous segment of chromosomal DNA from E. **coli O157:H7**, isolated on plasmid pSC(overlap) (ATCC Number 69648), encodes an **adhesin** (SEQ ID NO:4) that mediates bacterial colonization of bovine intestines. The cloned **adhesin** gene can be expressed in host organisms and be used to prepare bovine immunoprophylatic vaccines.

REFERENCE COUNT: 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 6 OF 17 MEDLINE on STN
ACCESSION NUMBER: 97323981 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9180177
TITLE: Genetic and phenotypic analysis of Escherichia **coli** with enteropathogenic characteristics isolated from Seattle children.
COMMENT: Comment in: J Infect Dis. 1998 Jun;177(6):1774-5. PubMed ID: 9607874
AUTHOR: Bokete T N; Whittam T S; Wilson R A; Clausen C R; O'Callahan C M; Moseley S L; Fritsche T R; **Tarr P I**
CORPORATE SOURCE: Department of Laboratory Medicine, University of Washington School of Medicine and Children's Hospital and Medical Center, Seattle 98105, USA.
CONTRACT NUMBER: AI-00964 (NIAID)
AI-24565 (NIAID)
RR-05655 (NCRR)
SOURCE: Journal of infectious diseases, (1997 Jun) 175 (6) 1382-9. Journal code: 0413675. ISSN: 0022-1899.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199706
ENTRY DATE: Entered STN: 19970716
Last Updated on STN: 19990129
Entered Medline: 19970627

AB Coliform colonies from children whose stools were submitted for microbiologic analysis were studied prospectively to determine the frequency of shedding of enteropathogenic Escherichia **coli** (EPEC). In total, 2225 isolates from 445 patients were probed with eaeA (encoding intimin) and the EAF (EPEC adherence factor) probe, and adherence and actin-aggregating phenotypes were determined. Twenty-five patients (5.6%) shed non-**O157:H7** eaeA+ EAF- E. **coli**. Of these 25 patients, isolates from 5 produced Shiga toxins and from 3 possessed bfpA (encoding the bundle-forming pilus) sequences. Non-**O157:H7** eaeA+ E. **coli** from 21 (84%) of 25 patients adhered locally to and aggregated actin in HeLa cells. Four patients shed nonadherent EAF+ eaeA- E. **coli**. Non-**O157:H7** eaeA+ and EAF- isolates belonged to diverse electrophoretic types and classical and nonclassical enteropathogenic serotypes. EPEC are relatively common in stools submitted for analysis in this North American pediatric hospital. Their etiologic role in childhood diarrhea warrants elucidation.

L12 ANSWER 7 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 1996:137759 CAPLUS
DOCUMENT NUMBER: 124:200194
TITLE: Escherichia **coli O157:H7** epithelial **adhesin** gene sequence and vaccine for cattle to protect against hemorrhagic colitis
INVENTOR(S): **Tarr, Phillip I.; Bilge, Sima S.; Besser, Thomas E.; Vary, James C., Jr.**
PATENT ASSIGNEE(S): Children's Hopsital and Medical Center, USA; University of Washington; Washington State University Research Foundation
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9600233	A1	19960104	WO 1995-US6994	19950607
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9528160	A1	19960119	AU 1995-28160	19950607
US 5798260	A	19980825	US 1997-765081	19970326
PRIORITY APPLN. INFO.:			US 1994-265714	19940624
			WO 1995-US6994	19950607

AB A continuous segment of chromosomal DNA from E. **coli O157:H7**, isolated on plasmid pSC(overlap) (ATCC Number 69648), which encodes an **adhesin** that mediates bacterial colonization of bovine intestines.

L12 ANSWER 8 OF 17 TOXCENTER COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1996:137523 TOXCENTER
COPYRIGHT: Copyright 2004 ACS
DOCUMENT NUMBER: CA12415200194G
TITLE: Escherichia **coli O157:H7** epithelial **adhesin** gene sequence and vaccine for cattle to protect against hemorrhagic colitis
AUTHOR(S): **Tarr, Phillip I.; Bilge, Sima S.; Besser, Thomas E.; Vary, James C., Jr.**
CORPORATE SOURCE: ASSIGNEE: Washington State University Research Foundation
PATENT INFORMATION: WO 96233 A1 4 Jan 1996
SOURCE: (1996) PCT Int. Appl., 41 pp.
CODEN: PIXXD2.
COUNTRY: UNITED STATES
DOCUMENT TYPE: Patent
FILE SEGMENT: CAPLUS
OTHER SOURCE: CAPLUS 1996:137759
LANGUAGE: English
ENTRY DATE: Entered STN: 20011116

Last Updated on STN: 20020820

AB A continuous segment of chromosomal DNA from E. **coli** **O157:H7**, isolated on plasmid pSC(overlap) (ATCC Number 69648), which encodes an **adhesin** that mediates bacterial colonization of bovine intestines.

L12 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 1993:206797 CAPLUS
DOCUMENT NUMBER: 118:206797
TITLE: mRNA processing independent of RNase III and RNase E in the expression of the F1845 fimbrial **adhesin** of Escherichia **coli**
AUTHOR(S): **Bilge, Sima S.**; Apostol, John M., Jr.; Aldape, Mark A.; Moseley, Steve L.
CORPORATE SOURCE: Dep. Microbiol., Univ. Washington, Seattle, WA, 98195, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (1993), 90(4), 1455-9
CODEN: PNASA6; ISSN: 0027-8424
DOCUMENT TYPE: Journal
LANGUAGE: English
AB F1845, the fimbrial **adhesin** of a diarrhea-associated E. **coli**, confers upon the bacteria the ability to adhere to cultured epithelial cells in a diffuse pattern. The fimbrial subunit gene, daaE, is encoded on a polycistronic mRNA which is processed endoribonucleolytically to produce a stable message encoding only daaE. The processing event occurs in bacterial strains with mutations in RNase III or RNase E, the only endoribonucleases which have been implicated in the processing of E. **coli** mRNA. Sequences encoding a stem-loop structure downstream of daaE play an essential role in determining the stability of the daaE mRNA. Rapid degradation of the sequences upstream of the cleavage site occurs upon processing, suggesting that processing of the F1845 polycistronic mRNA results in differential expression of genes involved in the biogenesis of fimbriae.

L12 ANSWER 10 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 7
ACCESSION NUMBER: 1993:402197 CAPLUS
DOCUMENT NUMBER: 119:2197
TITLE: Transcriptional organization of the F1845 fimbrial **adhesin** determinant of Escherichia **coli**
AUTHOR(S): **Bilge, Sima S.**; Apostol, John M., Jr.; Fullner, Karla Jean; Moseley, Steve L.
CORPORATE SOURCE: Dep. Microbiol., Univ. Washington, Seattle, WA, 98195, USA
SOURCE: Molecular Microbiology (1993), 7(6), 993-1006
CODEN: MOMIEE; ISSN: 0950-382X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The transcriptional organization of the gene cluster encoding the F1845 fimbrial **adhesin** of a diarrhea-associated Escherichia **coli** was investigated. Genes daaA to daaE were determined to constitute a single transcriptional unit under the control to the daaA promoter. The nucleotide sequence of daaA and that of an upstream open reading frame

encoded on the opposite strand, designated daaF, were determined to share limited homol. with the papB and papI genes of the P fimbrial **adhesin**, resp. The 5' termini of the daaF and daaABCDE transcripts were mapped by primer extension and nuclease protection analyses. The promoters for these transcripts were associated with potential regulatory sequences including two consensus leucine-responsive regulatory protein (Lrp)-binding sites which contained differentially methylated GATC sequences, a cAMP-CRP-binding site, and an integration host factor (IHF)-binding site. Expression of the daa locus was determined to be dependent on Lrp, subject to catabolite repression, and dependent on IHF.

L12 ANSWER 11 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:101465 CAPLUS
DOCUMENT NUMBER: 120:101465
TITLE: Molecular and transcriptional characterization of F1845, the fimbrial **adhesin** of a diarrhea-associated Escherichia **coli** which mediates diffuse adherence to HEp-2 cells
AUTHOR(S): **Bilge, Sima Shabestari**
CORPORATE SOURCE: Univ. Washington, Seattle, WA, USA
SOURCE: (1992) 166 pp. Avail.: Univ. Microfilms Int., Order No. DA9239430
From: Diss. Abstr. Int. B 1993, 53(8), 3915
DOCUMENT TYPE: Dissertation
LANGUAGE: English
AB Unavailable

L12 ANSWER 12 OF 17 DISSABS COPYRIGHT (C) 2004 ProQuest Information and Learning Company; All Rights Reserved on STN
ACCESSION NUMBER: 93:3524 DISSABS Order Number: AAR9239430
TITLE: MOLECULAR AND TRANSCRIPTIONAL CHARACTERIZATION OF F1845, THE FIMBRIAL **ADHESIN** OF A DIARRHEA-ASSOCIATED ESCHERICHIA **COLI** WHICH MEDIATES DIFFUSE ADHERENCE TO HEP-2 CELLS
AUTHOR: **BILGE, SIMA SHABESTARI [PH.D.]**; MOSELEY, STEVE L. [advisor]
CORPORATE SOURCE: UNIVERSITY OF WASHINGTON (0250)
SOURCE: Dissertation Abstracts International, (1992) Vol. 53, No. 8B, p. 3915. Order No.: AAR9239430. 166 pages.
DOCUMENT TYPE: Dissertation
FILE SEGMENT: DAI
LANGUAGE: English
ENTRY DATE: Entered STN: 19930202
Last Updated on STN: 19930202
AB Diarrheagenic E. **coli** have been characterized by their ability to produce distinctive patterns of adherence when bound to cultured epithelial cells. F1845, the fimbrial **adhesin** of a diarrheal E. **coli** isolate C1845, was found to be responsible for the ability of the bacteria to adhere to cultured epithelial cells in a diffuse pattern and to agglutinate human red blood cells in the presence of mannose. The molecular and transcriptional characterization of the cloned F1845 determinant is the subject of this dissertation.

The F1845 determinant contains five genes, daaA thru daaE, which encode proteins of 10, 95, 27, 15.5, and 14.3kDa, respectively. DaaE was

determined to function as the major fimbrial subunit as well as the **adhesin** molecule. The nucleotide sequence of daaE was determined and found to share extensive homology with the subunit genes of the AFAI and Dr hemagglutinins of uropathogenic E. **coli** in regions encoding the signal sequence and sequences upstream of it but not in the regions encoding the mature protein. These results in addition to restriction site and protein map similarities observed indicate that the F1845, AFA I, and Dr determinants are members of a family of **adhesins.**

Genes daaA through daaE were found to constitute a single transcriptional unit under the control of a promoter upstream of the daaA gene. The daaABCDE transcript is endoribonucleolytically processed to a stable 1.3kb mRNA encoding only daaE. RNase III and RNase E were determined not to have a role in this site-specific processing event. Sequences encoding a stem-loop structure downstream of daaE were determined to play an essential role in determining the stability of the daaE mRNA. Rapid degradation of the sequences upstream of the cleavage site occurs upon cleavage suggesting that processing of the F1845 polycistronic mRNA results in differential expression of proteins involved in the biogenesis of fimbriae. An antisense transcript complementary to the region encoding the 5$\sp\prime$ terminus of daaE was identified and is thought to play a role in the processing of this transcript.

The nucleotide sequence of daaA and that of an upstream open reading frame encoded on the opposite strand, designated daaF, were determined and found to share limited homology with papB and papI, the transcriptional regulatory genes of the P fimbrial **adhesin**, respectively. The 5$\sp\prime$ termini of the daaF and daaABCDE transcripts were mapped and their promoters as well as upstream regulatory sequences which included IHF and cAMP-CRP binding sites were identified. In addition, two MBF binding sites which contained differentially methylated GATC sequences were identified upstream of the daaA promoter. Furthermore, expression of F1845 was found to be dependent on the mbf product.

L12 ANSWER 13 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 8
ACCESSION NUMBER: 1992:103546 CAPLUS
DOCUMENT NUMBER: 116:103546
TITLE: Use of purified F1845 fimbrial **adhesin** to study localization and expression of receptors for diffusely adhering Escherichia **coli** during enterocytic differentiation of human colon carcinoma cell lines HT-29 and Caco-2 in culture
AUTHOR(S): Kerneis, Sophie; **Bilge, Sima S.**; Fourel, Valerie; Chauviere, Gilles; Coconnier, Marie Helene; Servin, Alain L.
CORPORATE SOURCE: Dep. Microbiol. Immunol., UFR Sci. Pharm. Paris XI, Chatenay-Malabry, 92296, Fr.
SOURCE: Infection and Immunity (1991), 59(11), 4013-18
CODEN: INFIBR; ISSN: 0019-9567
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Escherichia **coli** (EC) C1845 cells bearing the F1845 adhesive factor bind diffusely to differentiated human colon carcinoma cell lines HT-29 and Caco-2. By using antibodies directed against the purified fimbrial adhesion F1845 factor, the expression of the EC F1845-specific brush border receptors in the polarized human intestinal HT-29 and Caco-2 epithelial cells was studied by indirect immunofluorescence. A low level

of EC F1845 receptors in undifferentiated intestinal cells was detected; the receptors were localized in clustered cells. EC F1845 receptors were expressed at a high level in differentiated HT-29 and Caco-2 cells. EC F1845 receptors were expressed at a strikingly high level in the apical domains of the cells and developed during enterocytic differentiation in culture, in parallel with the apical expression of the intestinal brush border hydrolase sucrase-isomaltase.

L12 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 9
ACCESSION NUMBER: 1991:552019 CAPLUS
DOCUMENT NUMBER: 115:152019
TITLE: Molecular structure of the Dr **adhesin**: nucleotide sequence and mapping of receptor-binding domain by use of fusion constructs
AUTHOR(S): Swanson, Thomas N.; **Bilge, Sima S.**; Nowicki, Bogdan; Moseley, Steve L.
CORPORATE SOURCE: Dep. Microbiol., Univ. Washington, Seattle, WA, 98195, USA
SOURCE: Infection and Immunity (1991), 59(1), 261-8
CODEN: INFIBR; ISSN: 0019-9567
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The Dr hemagglutinin of uropathogenic Escherichia **coli** mediates adherence to the upper urinary tract. E. **coli** strains which express this **adhesin** bind to the Dr blood antigen and mediate mannose-resistant hemagglutination (MRHA). Chloramphenicol inhibits MRHA produced by the Dr hemagglutinin and may act as an analog for the tissue receptor at the **adhesin**-binding site. The nucleotide sequence of the Dr hemagglutinin fimbrial subunit was determined and found to have significant homol. with that of F1845, a fimbrial **adhesin** associated with diarrhea, and with the afimbrial **adhesin** AFA-I of uropathogenic E. **coli**. Chimeric **adhesin** determinants consisting of the Dr structural subunit and F1845 accessory genes or of the F1845 structural subunit and Dr accessory genes were constructed. The Dr and F1845 determinants were shown to have a close structural relationship, with functional differences concentrated in the fimbrial subunit.

Oligonucleotide-directed site-specific mutagenesis was used to facilitate construction of a hybrid **adhesin** subunit gene containing the amino terminus of F1845 fused to the carboxy terminus of the Dr structural gene. The resulting construct confers chloramphenicol-resistant hemagglutination when introduced into an E. **coli** strain expressing the cloned Dr hemagglutinin. The chloramphenicol sensitivity or resistance phenotype of MRHA produced by this family of **adhesins** is determined solely by the fimbrial subunit gene. Domains responsible for the chloramphenicol sensitivity of Dr-mediated MRHA reside within the amino-terminal portion of the fimbrial subunit.

L12 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 10
ACCESSION NUMBER: 1990:113026 CAPLUS
DOCUMENT NUMBER: 112:113026
TITLE: Molecular characterization of a fimbrial **adhesin**, F1845, mediating diffuse adherence of diarrhea-associated Escherichia **coli** to HEp-2 cells
AUTHOR(S): **Bilge, Sima S.**; Clausen, Carla R.; Lau,

Wayne; Moseley, Steve L.
CORPORATE SOURCE: Dep. Microbiol., Univ. Washington, Seattle, WA, 98195, USA
SOURCE: Journal of Bacteriology (1989), 171(8), 4281-9
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A fimbrial **adhesin**, designated F1845, was found to be responsible for the diffuse HEp-2 cell adherence of a diarrheal E. **coli** isolate. The genetic determinant of F1845 was cloned, and the order of the genes necessary for production of F1845 was determined by maxicell anal. Five polypeptides with apparent sizes of 10, 95, 27, 15.5, and 14.3 kilodaltons (kDa) were found to be encoded in that order by the F1845 determinant. The nucleotide sequence of the 14.3-kDa subunit gene was determined and found to share extensive homol. in its signal sequence with the gene encoding the structural subunit of the AFA-I hemagglutinin of a uropathogenic E. **coli** strain but not in the region encoding the mature protein. Southern blot hybridizations indicated that the F1845 determinants are of chromosomal origin. Hybridization studies using a probe from the region encoding the 95-kDa polypeptide indicated that related sequences may be plasmid associated in some strains and chromosomal in others. Addnl. hybridization studies of E. **coli** isolates possessing sequence homol. to the F1845 determinant suggest that the sequences in the 5' region of the F1845 structural subunit gene are more highly conserved than sequences in the 3' region.

L12 ANSWER 16 OF 17 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
ACCESSION NUMBER: 1989:374752 BIOSIS
DOCUMENT NUMBER: PREV198937053875; BR37:53875
TITLE: DNA SEQUENCE OF THE 075X **ADHESIN** HOMOLOGY BETWEEN SUBUNITS OF UROPATHOGENIC AND DIFFUSELY ADHERENT ESCHERICHIA-**COLI** ASSOCIATED WITH DIARRHEA.
AUTHOR(S): SWANSON T [Reprint author]; **BILGE S**; HULL S; NOWICKI B; MOSELEY S
CORPORATE SOURCE: UNIV WASH, CHILD HOSP, SEATTLE, WASH, USA
SOURCE: Abstracts of the Annual Meeting of the American Society for Microbiology, (1989) Vol. 89, pp. 102.
Meeting Info.: 89TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS, LOUISIANA, USA, MAY 14-18, 1989. ABSTR ANNU MEET AM SOC MICROBIOL.
CODEN: ASMACK. ISSN: 0094-8519.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 10 Aug 1989
Last Updated on STN: 10 Aug 1989

L12 ANSWER 17 OF 17 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
ACCESSION NUMBER: 1989:374744 BIOSIS
DOCUMENT NUMBER: PREV198937053867; BR37:53867
TITLE: MOLECULAR GENETIC CHARACTERIZATION OF AN **ADHESIN** OF AN ENTEROADHERENT ESCHERICHIA-**COLI**.

10/625972

AUTHOR(S):	**BILGE S** [Reprint author]; LAU W; MILLER C; MOSELEY S
CORPORATE SOURCE:	UNIV WASH, SEATTLE, WASH, USA
SOURCE:	Abstracts of the Annual Meeting of the American Society for Microbiology, (1989) Vol. 89, pp. 101. Meeting Info.: 89TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS, LOUISIANA, USA, MAY 14-18, 1989. ABSTR ANNU MEET AM SOC MICROBIOL. CODEN: ASMACK. ISSN: 0094-8519.
DOCUMENT TYPE:	Conference; (Meeting)
FILE SEGMENT:	BR
LANGUAGE:	ENGLISH
ENTRY DATE:	Entered STN: 10 Aug 1989 Last Updated on STN: 10 Aug 1989

FILE 'HOME' ENTERED AT 11:00:55 ON 14 OCT 2004

Searcher : Shears 571-272-2528